PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re application of

Fernando ORTEGA RODRIGUEZ, et al.

Docket No: Q66984

Appln. No.: 09/986,555

Group Art Unit: 2424

Confirmation No.: 5908

Examiner: Justin E. Shepard

Filed: November 9, 2001

For: SYSTEM AND METHOD OF COMMON SYNCHRONISATION FOR BURSTS TRANSMITTED OVER AN UPLINK CONNECTION IN AN INTEGRATED MULTISPOT SATELLITE COMMUNICATION SYSTEM IN A MULTIMEDIA BROADCASTING NETWORK

APPEAL BRIEF UNDER 37 C.F.R. § 41.37

MAIL STOP APPEAL BRIEF - PATENTS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In accordance with the provisions of 37 C.F.R. § 41.37, Appellant submits the following:

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I. REAL PARTY IN INTEREST

The real party in interest is Alcatel Lucent.

II. RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences.

III. STATUS OF CLAIMS

Claims 1-20 are pending.

Claims 1-8, 17 and 18 are rejected under 35 USC 103(a) as unpatentable over Adiwoso (U.S. Patent 6,067,453) in view of Schiff (U.S. Patent 4,577,316).

Claims 9 and 10 are rejected under 35 USC 103(a) as unpatentable over Adiwoso and Schiff, and further in view of Hreha (U.S. Patent 6,400,696).

Claims 11-14 are rejected under 35 USC 103(a) as unpatentable over Adiwoso in view of Schiff, and further in view of Setoyama (U.S. Patent 6,188,684).

Claims 15 and 16 are rejected under 35 USC 103(a) as unpatentable over Adiwoso in view of Schiff, and further in view of Sharon (U.S. Patent 6,836,658).

Claims 19 and 20 are objected to but indicate as reciting allowable subject matter.

Claims 1-18 are appealed.

IV. STATUS OF AMENDMENTS

There have been no amendments filed subsequent to the final Office action mailed April 22, 2009.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

Fig. 1 illustrates an interactive direct broadcast system, where a multimedia broadcast signal is sent from a service provider 1 to a user 2 via a satellite S, and a return channel is provided by which the user can send to the service provider. A network controller 3 controls various aspects of the system. Thus, each of the service provider 1, user 2 and controller 3 communicate with the satellite via uplink (P1, U1, C1) and downlink (P2, U2, C2) channels.

The provider 1 includes a broadcast signal producer 11 and a return channel satellite transmitter (RCST) 12. The controller 3 includes a signal generator 31 and its own RCST 32. The user 2 also includes an RCST 21. As described in the Background discussion at lines 12-20 of page 3 of the specification, the ETSI standard for DVB (Digital Video Broadcast) already specifies that the synchronisation of the bursts transmitted by the RCST 12 of the provider 1 is carried out by receiving information on a network clock reference (NCR) inside standard MPEG2-TS packets sent by a network controller. The RCST 12 then reconstructs the original 27 MHz reference of the network control center, permitting it to transmit the return information in burst mode in an allocated time slot.

As described at lines 4-21 of page 4 of the specification, the present invention recognizes that the multiplexer on board the satellite (e.g., multiplexer 4 in Fig. 2) inserts different uplink channels (from both the service provider and the user) into a single DVB-S downlink signal, and that it would therefore be efficient to create a simple relationship between the reference frequency generated by the clock in the network controller 3 and the reference frequency of the satellite. Thus, according to the present invention, the transmission rate in a downlink direction from the satellite is a whole multiple of a clock reference of the network. In a particular example of the invention, the clock reference of the actual satellite is employed by the controller 3 to generate clock references for the network.

With the downlink transmission rate being a whole multiple of the network clock reference, and with the burst synchronization of both the provider and user bursts handled in

common, the multiplexing at the satellite becomes much easier, and can in fact be done in a synchronous manner such that the period of the downlink frame being equal to the period of the uplink frame. In an example given in the specification at page 9, the network clock reference is chosen to be 27 MHz, and the downlink transmission rate is a whole number multiple of this.

Since the downlink transmission rate is a whole number multiple of the reference clock, the network clock reference (NCR) frequency can be generated on board the satellite. Synchronization of the equipment on board with the interactive network is substantially simplified. With the uplink and downlink frames being the same, and with the downlink transmission rate being a whole number multiple of the reference clock, the multiplexer onboard the satellite can multiplex synchronously rather than asynchronously. As a result of the claimed invention, both the user and the provider of the multimedia service are able to use the burst synchronization scheme defined in the DVB-RCS standard. Further, the generation of the clock frequency on board the satellite is simplified through the use of a single reference frequency both for synchronization with the interactive network and for generating the downlink signal.

With reference to claim 1, the integrated multispot satellite communication system is shown in Fig. 1, wherein the satellite S receives a multimedia broadcast signal (via P1) from a provider 1 and transmits said multimedia broadcast signal (via U2) to a user 2 in response to a request (via U1) from said user. The common burst synchronization means is the clock generator onboard the satellite which is used as a reference frequency for the network clock reference (lines 1-5 and 28-34 of page 9), along with optionally the signal generator 31 of the network controller 3 which could still generate the network timing signals (lines 14-17 of page 3, lines 30-32 of page 5) using the satellite clock as a reference frequency. The downlink transmission rate (Rtd, page 8) is a whole multiple (M) of a clock reference (27 MHz) of the network (see discussion at page 8). The network controller (3 in Fig. 1) receives (via C2) different return channels from the user and the provider (lines 29-30 of page 6), via the satellite S, wherein a signalling part of said multimedia broadcast signal is addressed from said provider to said network controller (lines 23-35 of page 4). Different uplink channels from a service

provider and a user are inserted into a downlink signal in a synchronous manner (Fig. 2, lines 17-18 of page 8), such that a period of the downlink frame is equal to a period of the uplink frame (lines 14-19 of page 9).

With reference to claim 5, the network controller receives different return channels from a user and a provider (lines 33-34 of page 5), and all of the elements of claim 5 are supported in the specification in the same manner as in claim 1.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The grounds of rejection to be reviewed on appeal are:

1. Whether claims 1-8, 17 and 18 are unpatentable over Adiwoso in view of Schiff;

2. Whether claims 9 and 10 are unpatentable over Adiwoso and Schiff, and further in view of Hreha;

3. Whether claims 11-14 are unpatentable over Adiwoso in view of Schiff, and further in view of Setoyama; and

4. Whether claims 15 and 16 are unpatentable over Adiwoso in view of Schiff, and further in view of Sharon.

VII. ARGUMENT

1. Claims 1-8, 17 And 18 Are Not Unpatentable Over Adiwoso In View of Schiff –

Adiwoso is directed to establishment of separate links for gateways on one hand and users on the other hand, so as to partition the bandwidth and power allocation. Different bands of the user spectrum are used for the user and access links. As noted by the Examiner, Adiwoso does not teach a common synchronization scheme such that the transmission rate in the downlink direction is a whole multiple of a clock reference of the network, as required in the present claims. As also noted by the examiner, Adiwoso does not disclose that different uplink channels from a service provider and a user are inserted into a downlink signal in a synchronous manner, such that the period of the downlink frame is equal to the period of the uplink frame.

Schiff is directed to a synchronization system for a regenerative subtransponder of a satellite communication system. Actual time intervals are compared with optimal time intervals for properly synchronized transmission from each station, and adjustment if necessary. A number of earth stations can each transmit a burst of information during its subframe interval. One of the earth stations is a master station, and is the first to transmit information. After the master station is "timed," the adjustment is made for the other earth stations. Schiff teaches that each of the earth stations sharing the carrier should have the same data rate.

Schiff itself only discloses a single type of station, and the premise for properly timing the stations other than the master station is that the characteristics of all of the stations would be similar enough that the timing of the master station would accurately reflect and be applicable to the necessary timing for the other non-master stations.

The Examiner appears to understand that Schiff only discloses a plurality of users sharing the downlink channel. The Examiner states that because Adiwoso discloses plural types of stations, it would have been obvious to modify Schiff to interpret the master station as the provider and the other types of stations as the users. Appellant respectfully disagrees.

Schiff teaches that the master station and other stations should basically have the same data rate. However, the provider and the user in Adiwoso would not have the same data rate, and without the same data rate, then Schiff could not properly perform its intended purpose of timing the other stations. The characteristics of the provider and user are too different in this regard for such a substitution to have been obvious to one skilled in the art at the time of the invention.

Further, the modification proposed by the examiner, i.e., using the same data rate for all stations and then adjusting for all stations based on the master station, runs directly contrary to a central teaching of Adiwoso. Adiwoso teaches separating the user and gateway traffic for the purpose of power reduction and bandwidth management. If the gateway was made as the master station and the users were made as the other stations, the power and bandwidth would not be segregated but would instead be standardized based on the master station. Thus, all of the benefits of Adiwoso would be lost if the teaching of Schiff were to be applied as suggested by the Examiner. Because the modification proposed by the examiner would eliminate or at least substantially hinder a clear central purpose of Adiwoso, the modification cannot be considered obvious without some clear and explicit direction to do so, and that is lacking here.

While the Examiner argues that the motivation to combine Schiff and Adiwoso would have been to allow multiple users to transmit upstream on the same frequency, this is not the point. One skilled in the art would understand that if the master station was the provider and the other stations were the users, and the scheme of Schiff was applied to Adiwoso, then Adiwoso would actually be *less* efficient, because Schiff does not account for the difference between a user and a provider in terms of power and bandwidth requirements.

Thus, the proposed combination of references fails to disclose or suggest a common means of burst synchronisation such that the transmission rate in a downlink direction from the satellite is a whole multiple of a clock reference of said network; and *wherein different uplink channels from a service provider and a user are inserted into a downlink signal in a synchronous manner* such that a period of the downlink frame is equal to a period of the uplink frame, as recited in independent claims 1 and 5. As admitted by the Examiner, Adiwoso alone does not

disclose or suggest this feature, and as explained above by appellant, one skilled in the art at the time of the invention would not have been motivated to combine Schiff into Adiwoso in a manner would lead to the subject matter of independent claims 1 and 5.

As to the non-obviousness of modifying Adiwoso in such a manner as to render it incapable of performing the primary function of its design, the examiner argues in the final Office action mailed April 22, 2009 that Adiwoso is relied on to teach a general overview of the satellite network as well as the type of data that could be transmitted, and since Schiff is mostly silent as to the type of data being transmitted, combining their teachings would not destroy the general overview of the network. But this is really no response to the issue. The point is that segregation of user and gateway traffic is an important aspect of Adiwoso, and in order to achieve the claimed invention it would have been necessary to modify Adiwoso such that it does not segregate user and gateway traffic. The examiner has not given any reason why the artisan would have abandoned this central aspect of Adiwoso's design.

Regarding the reading of the claim language regarding the "provider" station on the master station in Schiff, the examiner is simply arguing that since one station is different from the others, it can be considered a "provider" station. This is apparently without reference to whether it provides anything that would justify its being termed a "provider" station. Claim 1 of the present application states that the satellite receives a multi-media broadcast signal from the provider station. The master station of Schiff does not do this, and therefore is simply not a "provider" station.

It is also to be noted that, while master and slave stations may have the same data rate, the reasons for this do not apply to a provider station vs. a user station. A provider station and user station are not a master-slave relationship. The examiner has given no reason why one of skill in the art would have modified Adiwoso to adopt the master-slave arrangement of Schiff, or without having a master-slave arrangement, would have adopted the timing relationships or data rates of the master-slave system of Schiff in a system that had no master-slave setup.

From the above discussion it will be clear that the examiner is using the present claims as a roadmap for picking and choosing selected properties from the prior art and then putting them together in a specific way so as to achieve the invention, even with no real motivation for doing this except what is found in the present application.

2. Claims 9 and 10 Are Not unpatentable Over Adiwoso And Schiff, And Further In View of Hreha -

Claims 9 and 10 patentably distinguish over the prior art applied against them, due to their dependence on patentable parent claims and the fact that Hreha does not make up for the deficiencies of Adiwoso and Schiff in teaching the subject matter of their parent claims.

3. Claims 11-14 Are Not Unpatentable Over Adiwoso In View of Schiff, And Further In View of Setoyama -

Claims 11-14 patentably distinguish over the prior art applied against them, due to their dependence on patentable parent claims and the fact that Setoyama does not make up for the deficiencies of Adiwoso and Schiff in teaching the subject matter of their parent claims.

4. Claims 15 and 16 Are Not Unpatentable Over Adiwoso In View of Schiff, And Further In View of Sharon –

Claims 15 and 16 patentably distinguish over the prior art applied against them, due to their dependence on patentable parent claims and the fact that Hreha does not make up for the deficiencies of Adiwoso and Schiff in teaching the subject matter of their parent claims.

CONCLUSION -

For the above reasons, reversal of all rejections is respectfully solicited.

Respectfully submitted,

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CLAIMS APPENDIX

CLAIMS 1-18 ON APPEAL:

1. Integrated multispot satellite communication system in a multimedia broadcasting network with a return channel, comprising:

a satellite that receives a multimedia broadcast signal from a provider and transmits said multimedia broadcast signal to a user in response to a request from said user;

common means of burst synchronisation such that the transmission rate in a downlink direction from the satellite is a whole multiple of a clock reference of said network; and

a network controller that receives different return channels from said user and said provider, via said satellite, wherein a signalling part of said multimedia broadcast signal is addressed from said provider to said network controller,

wherein different uplink channels from a service provider and a user are inserted into a downlink signal in a synchronous manner, such that a period of the downlink frame is equal to a period of the uplink frame.

2. The system according to claim 1, wherein said satellite is configured to generate said network clock reference.

3. The system of claim 2, further comprising a multiplexer.

4. The system according to claim 3, characterised in that said multiplexer inserts in the synchronous manner the different uplink channels from the service provider and the user into the downlink signal.

5. Method of burst synchronisation in an integrated multispot satellite communication system in a multimedia broadcasting network with return channel, comprising:

a network controller receiving different return channels from a user and a provider, via a satellite, wherein a signalling part of a multimedia broadcast signal from said provider to said user, in response to a user request, is addressed from said provider to said network controller,

wherein said synchronisation is common for a multimedia services provider and a user, in such a manner that the transmission rate in a downlink direction is a whole multiple of a network clock reference,

wherein different uplink channels are inserted into a downlink signal in a synchronous manner, such that a period of the downlink frame is equal to a period of the uplink frame.

6. The method according to claim 5, comprising generating said network clock reference in said satellite of said system.

7. The method of claim 5, wherein said satellite uses a multiplexer to perform said synchronization.

8. The method of claim 7, wherein said multiplexer synchronously fits the different uplink channels into the downlink signal.

9. The system of claim 1, wherein said system is configured to communicate in accordance with digital video broadcasting-return channel system (DVB-RCS).

10. The method of claim 5, wherein method comprises communicating in accordance with digital video broadcasting-return channel system (DVB-RCS).

11. The system of claim 1, wherein said downlink direction transmission rate is one of 54 Mbit/s, 81 Mbit/s and 108 Mbit/s.

12. (previously presented) The method of claim 5, wherein said downlink direction transmission rate is one of 54 Mbit/s, 81 Mbit/s and 108 Mbit/s.

13. The system of claim 1, wherein a bandwidth of a transmitter onboard said satellite is a multiple of 27 MHz.

14. The method of claim 5, wherein a transmitter onboard said satellite operates at a bandwidth that is a multiple of 27 MHz.

15. The system of claim 1, further comprising:

a regenerator, positioned on said satellite, that performs multiplexing and at least one of cross-connecting and broadcasting channels to different coverage zones, wherein said network controller performs control operations and verifies at least one of an identity and a profile of said user.

16. The method of claim 5, further comprising performing multiplexing and at least one of cross-connecting and broadcasting channels to different coverage zones, by a regenerator

positioned on said satellite, wherein said network controller performs control operations and verifies at least one of an identity and a profile of said user.

17. The system of claim 1, wherein said request from said user comprises a request for video on demand service.

18. The method of claim 5, wherein said request comprises a request for video on demand service.

EVIDENCE APPENDIX:

There is no evidence submitted pursuant to 37 C.F.R. §§ 1.130, 1.131, or 1.132 or any other evidence entered by the Examiner and relied upon by Appellant in the appeal.

RELATED PROCEEDINGS APPENDIX

There are no decisions rendered by a court or the Board in any proceeding identified about in Section II pursuant to 37 C.F.R. § 41.37(c)(1)(ii).